Lenz Instruments

HAM-Inspector™

- **Determination of fat percentage and weight in raw meat**
- **Determination of salt content after the salting stage**
- **Raw meat classification and sorting**
- **Optimisation of the dry-cured process**

HAM INSPECTOR™

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HAM-Inspector™

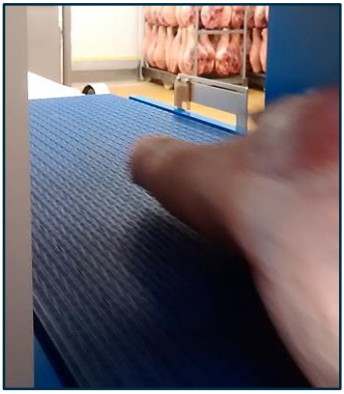
DESCRIPTION

HAM-Inspector™ is an accurate in-line magnetic scanner that allows the fast characterisation and sorting of meat primal cuts, particularly hams and shoulders, according to their weight and fat content.

The scanner can be also used to determine the salt content during or after the salting stage, in the production of dry-cured ham.

TECHNOLOGY

The equipment uses a contactless inspection method to preserve the integrity and physical characteristics of the meat. The method, developed in collaboration with SSICA (Parma) and IRTA (Spain), is based on the different response of fat and lean tissues to a low intensity magnetic field. An integrated conveyor belt allows automatically scan the meat sample in less than 4 s.



MAIN APPLICATIONS

- In-line sorting of ham and shoulder in abattoirs.
- Quality control of the raw meat in ham producers
- Optimisation of the salting process
- Monitoring of the salt intake during the salting process (in a 2 stages salting process)
- Optimisation of the dry-curing process (yield control)
- Sorting of products with reduced salt content

HAM-Inspector™

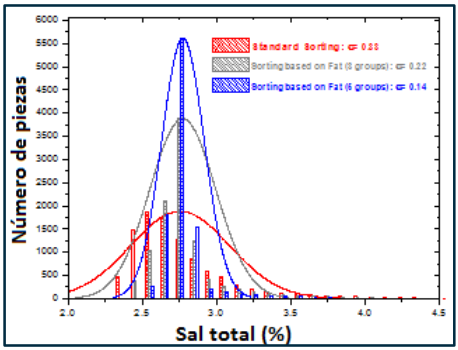
Applications: Optimisation of the salting process

Fat percentage and weight are the main parameters of the raw ham that conditions the salt uptake, and the weight losses in dry-cured ham production.

HAM-Inspector™ allows the fast classification and sorting of raw meat at the reception stage.

The sorting of raw meat in groups of fat and weight improves the homogeneity of the salting process significantly , as shown in the right plot), and reduces yield variations in the final product.

HAM-Inspector™ also offers the possibility to develop and implement new strategies to reduce salt uptake in the final product, without compromising its microbiological safety.



HAM-Inspector™

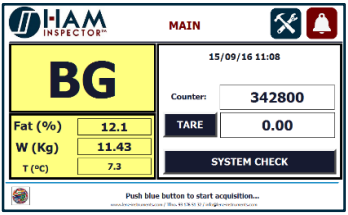
Technical Specifications

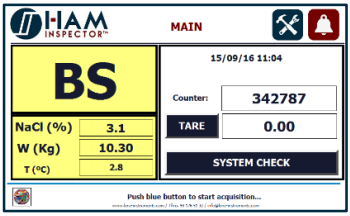
General Description

HAM-Inspector™ determines the fat content in raw meat. The machine includes a dynamic weighting system capable to weight the meat piece with an accuracy of ±10g. The machine also predict salt content in meat pieces after the salting process.

Both parameters of fat and salt are key for the elaboration of dry-cured products, particularly to optimise and control the dry-curing process.

This fat and salt analyser has been designed as an autonomous system for the in-line inspection of whole meat pieces (e.g. ham, shoulder and belly) and, is equipped with a conveyor belt capable to transport up to 1,000 pieces per hour. The system can be inter-connected to the ERP of the plant an to other elements of the plant (e.g. sorting systems).



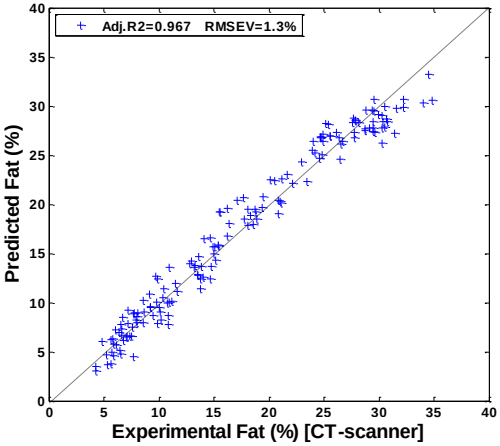


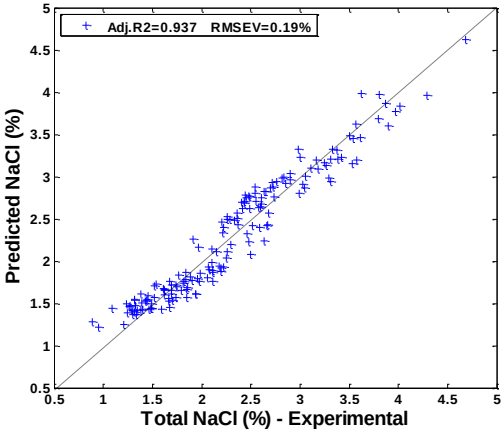
- **Control via PLC**
- **Dynamic weighting**
- **Tactile user interface**
- **Product editor**
- **ERP interface**
- **Auto cleaning conveyor**

HAM-Inspector™

Accuracy

Weight: Maximum/Accuracy	30 kg/± 10g
%Fat prediction accuracy[1]	<1.5%
% salt prediction accuracy[2]	<0.2%





[1] Accuracy obtained in fresh hams including: Serrano, Iberian and Parma type in a fat range of 5%-35%.

[2]Accuracy obtained in hams including: Serrano, Iberian and Parma type after the salting stage, in a range of salt from 1%-5%.

Technical Specifications

Weight	400 kg
Dimensions	150cm (L) x 116cm (W) x 176 cm (H)
Tunnel Aperture	450 mm (W) x 270 mm (H)
Power supply	Monophasic AC-230V/50Hz
Electrical Power	≤1kW
Working Temperature	0ºC – 35ºC
Ambient Humidity	0% - 95% (Without condensation)
Construction details	The mechanical structure is made on stainless steel AISI-304. All parts potentially in contact with meat during operation are made of food-grade materials, including the conveyor belt, and the cover of the inspection tunnel.
Index Protection	IP-65
Conveyor driver	Drum motor (IP66) ,Stainless Steel body (Interroll Spain,S.A.).
Conveyor belt	Modular band made on food-grade PP – Habasit AG Auto cleaning system (optional) – Habasit HyCLEAN
Graphical User Interface	Tactile Screen (IP-65)
Data connection	Ethernet 10/100, OPC

Standards

Lenz Ham-Inspector™ is CE labelled and complies with the following directives:

- EMC (Electromagnetic Compatibility) Directive 2004/108/EEC
- LVD (Low voltage directive) 2006/95/EEC
- MD (Machine Directive) 2006/42/EEC

About LENZ INSTRUMENTS S.L.

Lenz Instruments S.L. is a technology-based company focused on the development and commercialization of Instruments and systems for industrial applications, as well as on providing engineering services in fields related to process optimization and monitoring, process control, traceability, electronic design, software, and automation.

Our key fields of expertise include non-destructive or contactless inspection technologies based on ultrasound, electromagnetic sensors, vision systems (2D, 3D), and spectroscopy (UV-Vis-NIR, SWIR, Raman, and LIBS).

Created in 2011, the company is part of an international group of Applied Research and technology transfer employing over 100 engineers, scientists, and consultants.

We are located in a single two story building in the 22@ innovation district in Barcelona. The 22@ innovation district is a business area integrated by many technological companies, universities and research and technology transfer centres. We have a mechanical workshop and laboratories for the development, manufacturing, testing and certification of our own systems.

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